

April 26, 2013

To: Executive Board

Subject: **Comprehensive Operational Analysis Summary Report**

Recommendation

Receive and file the Comprehensive Operational Analysis summary report.

Executive Summary

Foothill Transit is embarking on a Comprehensive Operational Analysis (COA). A COA is an in-depth program review of the services a transit agency provides to determine system strengths and weaknesses. Generally, COAs achieve this by determining the effectiveness of current service at meeting peoples' needs and how efficient transit agencies are in delivering those services.

Because of their comprehensive nature, COAs are typically completed once every five to ten years; the last one completed at Foothill Transit was in 2005. Since that time, the economy has dramatically shifted and the tools and technology available to analyze issues have also become more advanced. Foothill Transit's Measure R allocation provide an opportunity to review its services and plan for the future.

An RFP is proposed to be released for a consultant to conduct the specialized work required of the COA. The COA is projected to take 15 months to complete and \$800,000 has been budgeted for this program in Fiscal Year 2014. The table below includes a listing of agencies who have recently conducted COAs and their associated costs. **Attachment A** is the Request for Proposals document.

Agency	Original Cost	Original Schedule	Actual Project Start	Actual Project End
Omnitrans	\$998,313	12 months	March 2011	2 years 2 months
OCTA	\$568,918	14 months	May 2010	1 year 8 months
SamTrans	~ \$500,000	15 months	March 2011	2 years 9 months, December 2013
Riverside Transit Agency	\$783,284	18 months	Unknown	Unknown

Analysis

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I. What is a COA

A Comprehensive Operational Analysis (COA) is an in-depth investigation which looks at the planning and operating services of a transit agency to determine system strengths and weaknesses. The goals of a COA are to optimize current transit services and maximize underutilized resources so that people can capitalize on a fully functioning transit system. A COA generally achieves this by surveying riders and potential customers, measuring the effectiveness of current services, and determining whether current transit services are fulfilling the revealed needs of people within the service area. Using existing traffic models (which diagram the flow and volume of traffic) and land use/population forecasts (to determine what kind of development is allowed where and the propensity of attracting and generating population growth), the consultant then inputs survey responses into these models' underlying formulas. The resulting outputs allow planners to see where people are going, what mode they are using (e.g. bus, car, bicycle), and what routes they are taking to fulfill their trips. These outputs identify nodes in the service area that engender high transit use and those areas that are less prone to transit usage.

Based on the outputs from the models, along with agency planners' institutional knowledge of the transit system and community, a determination is made regarding which areas require additional service and which areas are over-served. The computer models' inventory of these areas, in tandem with the catalogue of existing services, allows for the proper allocation of resources so that each neighborhood within the service area receives its appropriate level of service, and in a way that is financially sustainable to the transit agency. Recommendations for improvements to service planning and operational implementation are then made based upon these findings, and are often framed in short, medium, and long-term plans.

II. Why a COA now?

It is important for Foothill Transit to embark on a COA which takes into account the current state of the economy along with new, projected land-use and population forecasts for the foreseeable future. In today's uncertain financial climate, COAs are an especially important tool to measure how effective a transit agency is in deploying service and utilizing public resources. The findings from a COA can be used to improve service and provide a relevant good that meets the needs of the public. The Orange County Transportation Authority, Riverside Transit Agency (RTA), and San Bernardino Associated Governments in association with Omnitrans are among local agencies that have conducted COAs within the last two years.

Despite the persistent, sluggish economy and even in the midst of a reduction in service miles and hours, ridership at RTA and Omnitrans from 2010 – 2012 has increased while Foothill Transit's ridership has remained relatively flat. A COA will provide information



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which can help define actions to improve our service. In order for a transit agency to be successful it must be responsive to its customers' needs. Responsiveness is an element of the Foothill Transit mission statement and the COA will enable us to properly gauge customers' needs. A COA is a critical link to ensuring that any transit agency is delivering effective and efficient services with quality and innovation.

As one of the largest providers of public transit in the county, Foothill Transit can move beyond simply managing the system and operating transit, to expanding access to more communities and offering more travel choices to people. A stronger, more coordinated service network can address the myriad needs of people in the county and region in general. These include residents who rely on transit to access local services and conduct personal errands, as well as regional denizens who pass through our service area on their way to jobs or meetings. The COA will allow for the exploration of new service delivery methods so that Foothill Transit can be responsive to changes in the way business transactions are conducted and land use is developed. Addressing these concerns and other prevailing issues will allow Foothill Transit to solve mobility problems and enable the agency to play a key role in enhancing the quality of life in the region.

III. What the last COA covered

The last COA was completed in April 2005 prior to the recent recession when the economy was still strong and growing. The previous COA collected data through manual means – the consultant dispatched people onto buses to conduct surveys of riders and used clipboards to check off when a bus arrived at a timepoint to verify schedule adherence. The surveys asked people where they were going and then classified answers by zip code.

These limited recordings were then extrapolated on a line-by-line basis to develop overall system statistics. Based on these findings, minor route modifications to improve schedule adherence were recommended (e.g. making a right hand turn to avoid a heavy intersection instead of going straight) and a general five-year outlook on the economy was outlined. However, no plan on how transit could tie in and meet the projected growth needs was provided.

Overall, the previous COA made recommendations to improve efficiency but did not delve into the effectiveness of service, and much of the data cannot be properly used for detailed analysis today. For example, the consultant conducted on-board surveys but did not survey any people not riding a bus. That is to say, there were no surveys of potential customers who could ride our buses but did not currently use our service, and no questions asked as to what prevented them or could encourage them to use our service. In addition, the limited set of survey responses was aggregated at a zip-code level, making it difficult to determine the effectiveness of local lines.

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In the intervening years since the last COA, Foothill Transit has developed automated solutions to track all customer comments and verify on-time performance at every single timepoint on every single trip conducted in the system. What is needed now are usable data at a micro-level, representative of each of the various ethnic and socioeconomic neighborhoods within our service area. Since 2005, the economy has also veered in a different direction and the recommendations from the previous COA are not only outdated but also largely irrelevant to the current economy. A new COA will address the shortfalls from the last COA as well as cover new topics relevant to the improvement of service.

IV. What is covered in this COA

COAs typically take anywhere between one and two years to complete depending on the size of the system being reviewed. Foothill Transit has set an aggressive timeline of 15 months for completion. Please see the table below for a listing of some transit agencies conducting COAs and their associated timelines and costs.

Agency	Original Cost	Original Schedule	Actual Project Start	Actual Project End
Omnitrans	\$998,313	12 months	March 2011	2 years 2 months
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It is Foothill Transit's plan that with this expedited timeline, recommendations for service improvement can be implemented faster and customers can see a noticeable improvement to their experience sooner. Staff will give regular updates to the Executive Board and at the conclusion of the COA, the scenarios developed by the consultant will be reviewed and a recommendation presented on a preferred long range service plan for Board approval.

The goals for this COA are to develop future service scenarios which can increase current, system-wide ridership 3 percent over project start (in a two year span), and a five-year target of increasing ridership 5 percent over the aforementioned goal, along with a 10-year long range plan. The COA consists of four major phases each with its own relevant topics. The four phases are: Service Area Profile, Assessment of Current Ridership, System Analysis, Preferred Service Plan and Recommendations.

Attachment A contains the full scope of work for this project. The phases of the project are summarized below:

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Service Area Profile: The purpose of this phase is to create a detailed picture of the service area, to understand what is in the service area, the people who live here, and types of businesses that operate here. This section will identify corridors with high residential and employment densities, transit-oriented or mixed-use developments, and other corridors with multiple destinations and high trip generators – ingredients which lead to successful transit systems. Regional traffic and land-use models will be used to identify trip markets that are or are not being served by the Foothill Transit network. These computer models take into account existing infrastructure (e.g., size of road network, availability of utilities, home inventory) in concert with programmed transportation projects (such as the expansion of Metro Rail or implementation of High Occupancy Toll lanes on the freeway) to determine where people are going and how they are getting there.

In addition, the number of intra-town, inter-town, and cross valley trips will be classified and the number of riders on each of these types of services tabulated as a percentage of the system, with trips being categorized on a weekday and weekend basis. This basic building block is an intensive data collection phase which will allow the agency to fully understand what the service area is comprised of and consequently the type of bus service the area is capable of supporting.

Assessment of Current Ridership: This phase is concerned with understanding who Foothill Transit's riders are and why people do or don't take transit. The purpose of these surveys is to better understand travel behaviors and ascertain means of attracting new riders and growing ridership in the system. Questions will be disseminated to riders aboard the bus and survey materials will be available in the major languages spoken in the service area (English, Chinese, Spanish, etc.). Non-riders will also be included via telephone surveying, with a large enough sample size collected to ensure that the responses are statistically valid and representative of the service area population.

Focus groups representing sub-regions within the service area will also be held to further parse out information uncovered during the on-board and telephone surveys. Focus groups will consist of major employers, non-profit and civic groups, and institutes of higher education, etc. The answers to these surveys will help identify the different market segments in the service area so that Foothill Transit can provide a distinct, tailored, and relevant service to the plethora of customer segments in our service area.

System Analysis: A thorough analysis is conducted which ties the results of the preceding sections together. Among other items, a review of industry-wide statistics and a comparison of targets from similar agencies whose service profile mimics Foothill Transit will be completed. The relevancy and attainability of Foothill Transit's Key Performance Indicators will be assessed to ensure that Foothill Transit is employing the industry's best-practice performance measurements.

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The COA will also conduct an analysis for every single bus line, with trip frequencies and schedule adherence issues explored to determine the cause of successful and underperforming lines. Ridership on other agency lines which run parallel to Foothill Transit lines will be assessed to determine the competitiveness of Foothill Transit lines and whether there is any duplication in service that can be streamlined or any gaps in service that Foothill Transit can fulfill. Furthermore, the coordination of transfer times with other transit services will be reviewed to ensure that Foothill Transit is not operating in a vacuum and its passengers are experiencing a seamless trip across all travel modes and services.

TransCenters, Park & Ride lots, and corollary facilities also play a crucial role in the bus trip segment, and analyses will determine if these facilities are being strategically utilized and located and best practice site designs. While these destinations are often reached via automobile, the COA will evaluate pedestrian access to bus stops and identify barriers en route, as well as first and last mile gaps in transit service to destinations. If people cannot access bus stops then this means there are no people who are boarding the bus, so discovering the pedestrian route is equally as important as optimizing bus routes.

Preferred Service Plan and Recommendations: A baseline projection of future ridership will be calculated with service hours, routing of bus lines, population aging, and economic and highway traffic forecasts held constant. Using the findings from the public surveys and the results of the system analysis, multiple scenarios will be created to identify the best methods of maximizing resources and delivering an improved, quality service. Among these methods are alternative network designs for increasing ridership via geographic or productivity means. As an extreme, hypothetical example this would pose the option of whether bus service will consist of a warren of multiple routes with widespread coverage where every street in the service area is penetrated, but only once every 24 hours; or a single line with limited coverage but high frequency (e.g. ten times an hour, 24 hours a day). A variety of scenarios will be developed to effectively address improving transit service and increasing transit patronage. While multiple options will be developed, each scenario will contain an idealized transit network along with a fiscally constrained option segmented into a short term, two-year implementation plan; medium term, five-year implementation plan; and long range 10-year plan. Moreover, the COA will identify grant and funding opportunities from government and other philanthropic resources that could help realize the unconstrained version of plans.

V. RFP timeline

Foothill Transit will issue a request for proposals, hold a pre-proposal conference to answer any questions or requests for additional information from prospective consultants, review applications and conduct interviews. The timeline for release of the



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RFP to selection of a consultant is tentatively set for two months; because of the highly technical nature of work and forecasts being calculated, it is important to review each applicant's prospective methodology in regards to compiling and analyzing data as these will later form the underpinnings of the different transit scenarios.

Budget Impact

Funding for the Comprehensive Operational Analysis (COA) has been programmed into the draft FY 2014 budget.

Sincerely,

A handwritten signature in black ink, appearing to read 'Austin Lee'.

Austin Lee
Planning Manager

A handwritten signature in black ink, appearing to read 'Doran J. Barnes'.

Doran J. Barnes
Executive Director

PART III

PROPOSED SCOPE OF WORK

Introduction

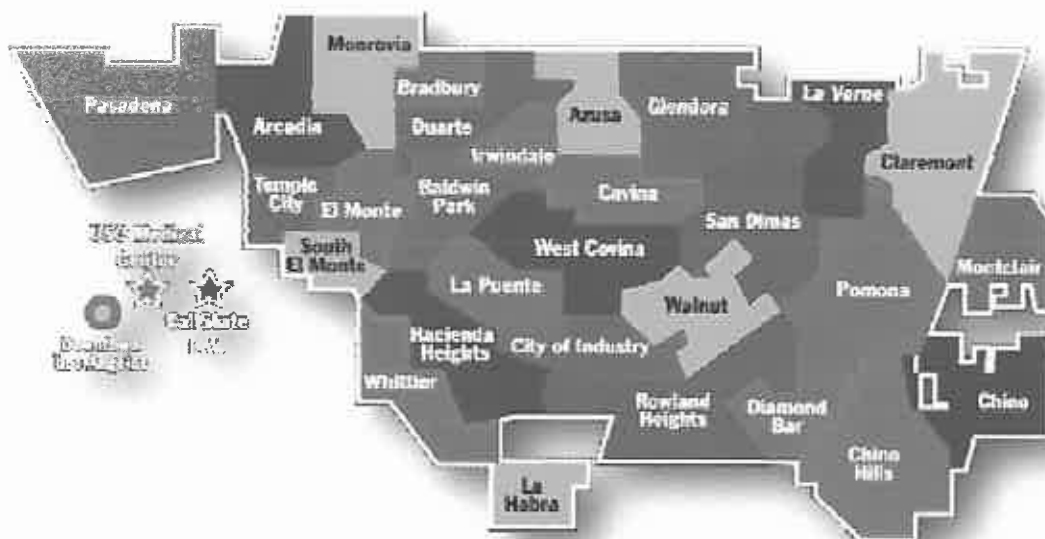
Foothill Transit's mission is to be the premier public transit provider committed to safety, courtesy, quality, responsiveness, efficiency and innovation. Foothill Transit is a true public-private partnership governed by a Joint Powers Authority comprised of 22 cities. Transit services are managed via an administrative contract with Veolia Transportation; Foothill Transit contracts for bus operations and maintenance services under two separate contracts with First Transit, with vehicle operations and maintenance provided at two facilities owned by Foothill Transit. The Foothill Transit fleet consists of approximately 300 total coaches. The fleet consist of 42-foot coaches; 40-foot coaches, 60-foot coaches, 30-foot coaches and 35 foot electric coaches.

Foothill Transit receives the second largest share of Transportation Development Act and State Transit Assistance funds in Los Angeles County. Foothill Transit primarily serves the San Gabriel Valley region, but also provides connections to Orange and San Bernardino Counties. In the fiscal year 2011-2012 Foothill Transit recorded 13,938,044 unlinked trips and operated 9,946,290 miles on 35 fixed route bus lines, of which:

- 28 local routes serve the San Gabriel Valley
- 6 express routes serve customers during peak hours in and out of downtown Los Angeles
- One 24 hour express line between Montclair and downtown Los Angeles.

Routes travel through various transit hubs including Montclair TransCenter, Claremont TransCenter, Pomona TransCenter, Eastland Center, The Plaza at West Covina, and El Monte Station. Foothill Transit also stops at Park-and-Ride lots located in the Cities of Chino, Diamond Bar, Industry, San Dimas, Glendora, West Covina, Pomona and Montclair. Foothill Transit accepts passes from other systems and riders are able to transfer to Omnitrans services at stops in Montclair, Pomona, and Chino and OCTA services in Brea.

The following map shows all the municipalities within the Foothill Transit service area:



Foothill Transit current service area.

General

This study will include a combination of extensive data collection and analysis through surveys and utilization of performance data provided by Foothill Transit. An inventory and assessment of these data and current financial streams will provide the basis for the future planning of transit services. While a system-wide overview is expected, a comparative analysis will also consider Foothill Transit's express and local routes specifically. All routes shall include recommendations and graphical displays of

alternative routings in order to improve service, and a block-by-block dissection and solutions for underperforming routes.

All visual information in the final report shall be displayed in such a way that it can be easily transferred for use in other reports. Data should also be organized and cross-referenced in an electronic format so that it can be further accessed and manipulated for future in-house analysis. The underlying data should be organized for possible use in future Short Range Transit Plans, National Transit Database (NTD), Title VI Civil Rights Act of 1964 reporting requirements, and grant applications among other items. All data collected and shapefiles, maps and other final documents produced for the COA will become the property of Foothill Transit.

Specific Scope of Work Requirements

Tasks 1 and 2 shall be completed within the first two months of the COA and respective deliverables provided to Foothill Transit before the end of this period. For all tasks, any deliverables utilizing Microsoft Office Word or Excel shall be submitted in a Microsoft Office 2010 or above file format.

TASK 1: Develop Work Plan and Schedule

Upon notice to proceed, the Consultant shall develop a Work Plan within 30 calendar days to guide and manage the project and accomplish goals and objectives, which shall include an organization chart, task listings and descriptions. This Work Plan shall include required staffing including roles and responsibilities within an organization chart, sample invoice and progress report template, and other administrative items. The development of the Work Plan will help to ensure a common understanding of expectations, in accordance with the scope of work, between the Consultant and Foothill Transit project teams.

Upon approval to proceed with the contract, the Consultant shall convene a kick-off meeting with Foothill Transit to review the Work Plan to discuss the approach, tasks, goals, and objectives. At this meeting, Foothill Transit and the Consultant will discuss expectations, confirm requirements, and identify key milestone dates. As part of the Work Plan, the Consultant should develop a project schedule that includes all activities, start dates, critical path items, estimated activity durations, product submittal dates, and relationships among work tasks. The schedule must account for up to up to 15 project team meetings within the 15 month project timeline.

Monthly Progress reports shall be prepared and submitted by the Consultant to document progress to date, to plan for work in the next monthly period and to identify critical issues. The project team meetings will be held to include the Consultant's project manager and other staff as appropriate. The purpose of these meetings will be to review project status and progress as well as resolve key issues and potential problems. Meeting agendas and minutes shall be prepared by the Consultant for submittal for review and concurrence from the Foothill Transit's project manager.

Minutes shall be prepared within five (5) working days of a project meeting. Consultant shall submit meeting minutes to the Foothill Transit project manager to include meeting date and time, agenda and sign-in sheet, contact information, and a summary of comments including action items. At the request of Foothill Transit, the Consultant shall identify an action plan within an action item matrix, if applicable, including any schedule revisions based upon the content and outcome of the meetings.

Deliverables

- ✓ Work plan
- ✓ Organization chart and responsibilities

TASK 2: Service Area Profile

- A. **Create a picture of Foothill Transit's service area:** Graphically identify corridors with high residential and employment density, transit-oriented or mixed-use developments, and other corridors with multiple destinations and high trip generators. The Consultant should use regional traffic and land-use models to identify trip markets that are or are not being served by the Foothill Transit network. A narrative shall be developed with the map which describes the highest trip originators (for example medium density, affordable housing units) as well as the most attractive destinations [for example employment clusters (which shall be classified by the North American Industry Classification System at a minimum) zoned as light industrial].
- B. **Trip types:** Classify the number of local (intra-town), inter-town, and cross valley lines and total number of trips served on each of the line types. Measure the number of riders on each of these services and tabulate each category's share as a percentage of system. Calculations should be done for both weekday and weekend trips, and identify peak hours in both travel directions for each of the trip types. Complementary maps to aid this narrative are preferred.

Deliverables

- ✓ ArcGIS shapefiles that contain:
 - Residential and employment densities for the entire service area by parcel.
 - Foothill Transit, Metro, Omnitrans, and municipally operated bus lines within the Foothill Transit service area.
 - Metrolink lines and stations within Foothill Transit service area.
 - All bus stops, classified by line.
- ✓ Map displaying service area with high density corridors highlighted and all operating transit lines. Map can be further segregated by member city if the Consultant prefers.
- ✓ "Line-type share" chart and complementary narrative.

TASK 3: Assessment of Current Foothill Ridership

A. **Line-by-line onboard ridership surveys:** The Consultant shall distribute and collect written surveys on board Foothill Transit coaches and stations. With input from Foothill Transit staff, the Consultant will be responsible for the following tasks related to survey research and polling:

- Design, develop and review questionnaires and surveys.
- Discuss risks and threats to validity for a given survey.
- Identify, develop and implement strategies for selection of appropriate samples and focus groups (in addition to on-board surveys)
- Conduct preliminary tests of data collection instruments on limited sample of riders prior to conducting system-wide survey.
- Administer surveys and collect data.
- Propose and implement quality control strategies.

The Consultant shall ensure that survey materials will be available in English, Spanish, Chinese. The Consultant shall propose a methodology and cost estimate to ensure that sufficient Chinese and Spanish-speaking survey takers are available on routes that predominately serve communities speaking these languages. In some cases, the response rate of certain subpopulations may differ based on their ethnicity and/or ability to speak and write English. The Consultant shall also propose a methodology to ensure that these subpopulations are sufficiently sampled and should be able to demonstrate that the surveys collected adequately comprise a representative sample for statistical purposes. The desired confidence level for the surveys per line is 95% with a precision of $\pm 3\%$. In its RFP submission, the Consultant shall propose a methodology to ensure that survey responses from language groups not listed above are included. Please see Appendix A for a list of questions expected on the surveys and questionnaires.

B. **Focus groups and other surveys:** Separate surveys shall also be administered via telephone to the non-rider population within the service area. Surveys will cover at least five distinct sub-regions and contain a representative sample size from each of the sub-regions, both to be determined by Foothill Transit and the Consultant. As with the on-board surveys, the Consultant shall ensure a representative sample is collected; the desired confidence level for the surveys per line is 95% with a precision of $\pm 3\%$. The purpose of these surveys is to understand why public transit is underutilized, better understand travel behaviors, and ascertain means of attracting new riders and growing ridership; questions from the on-board surveys can be used. Furthermore, the Consultant shall organize, at a minimum, five meetings with five focus groups representing each of the sub-regions. These focus groups will consist of major

employers, civic groups, non-profit organizations, institutes of learning (i.e. schools), current non-riders, and be used as a platform to further parse out information uncovered during the telephone surveys.

In addition, Consultant shall survey those cities whose municipal transportation departments receive Proposition A and C funds and operate their own bus lines or purchase transit services. Consultant will assess how these departments of transportation route their lines (if there is any nexus made to Foothill Transit lines during the planning phase), who they believe their core customers are, and the main trip purposes of their customers, to determine if there are any duplications in service that can be streamlined or any gaps in service that Foothill Transit can fulfill.

- C. **Fare Structure:** Assess riders' knowledge and their level of understanding of different fares, determine if fare structure needs to be streamlined for ease of use to attract new riders, assess whether the current fare structure is sufficient to continue existing services, and what fares would need to be altered to support the growth of an expanded system and service. The consultant shall conduct a regression analysis, and use any other methods necessary, to determine the relationship between fare prices and ridership volumes by fare type. The regression analysis shall include Foothill Transit and other transit agencies similar in size, while specific questions regarding Foothill Transit fare structure can be covered in the survey.
- D. **Analyze ridership in low-income areas:** Determine five year, historical ridership in low income areas, and identify if certain lines carry more transit dependent riders than others.
- E. **Identification of "minority lines":** Develop a GIS map identifying minority routes, or those routes with at least 1/3 of their revenue miles located in a census block/TAZ where the percentage minority exceeds the minority population within the service area.
- F. **Analyze ridership of other disadvantaged populations:** Analyze and identify concentrations of disabled and senior populations in service area and barriers to increasing ridership among these populations.

Deliverables

- ✓ Outreach and survey plan presented to Foothill Transit before survey commencement.
- ✓ Data methodology plan and software capable of calculating regression analysis, time-series analysis, coding of qualitative data, crosstabs, means, rankings or GIS mapping analysis.

- ✓ Survey results in chart format with an overview of descriptive statistics, submitted immediately to Foothill Transit once all surveys have been conducted and results tabulated.
- ✓ Analytical report of survey data on a more comprehensive scale in a format the Consultant deems appropriate.
- ✓ GIS maps and shapefiles of “minority lines” within the Foothill Transit service area.

TASKS 4 and 5

Tasks 4 through Tasks 5 represent the remainder of the COA. The consultant shall keep Foothill Transit up to date with its findings but the final deliverables for the following tasks are not expected until the end of the contract. As noted under the work plan, the Consultant shall meet with Foothill Transit staff in person or via phone on a monthly basis and provide a monthly progress report.

TASK 4: Organizational analysis of Foothill Transit

- A. **Analyze Key Performance Indicator (KPI) goals:** Assess the relevancy and attainability of Foothill Transit KPIs, how they are calculated and how they are reported. A review of industry-wide averages and a comparison of targets from similar transit agencies’ whose service profile mimics Foothill Transit (predominantly suburban with a central employment core) shall be completed.

Task 4: System Productivity Analysis.

The following items shall be considered on a line-by-line basis:

- B. **Analysis of major transfer points, TransCenters, Park & Ride lots:** This section can reference data collected from Task 1A. Review stops that serve as major transfer points to other (three) bus lines and determine average ridership share for each line at the stop and the linked trip path occurring by percentage. Determine if these stops and locations are ideal points for transfers. Also focus on TransCenters and each TransCenters’ share of overall system riders. If shared use facility, identify percentage of riders using each provider and also determine the linked trips occurring at TransCenters. Review efficiency of operations (boarding, pulling in/out, layover) at TransCenters and best practice designs for off-street stops for future TransCenters or Park & Ride Lot projects. Conduct an inventory on the average, weekday number of spaces occupied at each individual Park & Ride lot served by Foothill Transit.
- C. **Coordination with other service providers:** Determine efficacy of transfers and schedule coordination with other regional providers including OCTA, Omnitrans, Los Angeles Metro and Metrolink. Calculate the system-wide average wait time when alighting a Foothill Transit bus and waiting for another regional transit agency’s next bus at major transfer points including, but not

limited to, El Monte and Montclair. This section shall also compare ridership on other agencies' routes which run parallel to Foothill Transit routes and assess the competitiveness of Foothill Transit lines to ensure there is no duplication of services. The comparison of these services will include not only regional providers but also municipally operated or funded shuttles financed from Los Angeles County Propositions A and C.

- D. **Schedule adherence:** Assess on-time performance by route and time of day, average operating speeds during these periods, and provide analysis and recommendations for improvement of schedule adherence.
- E. **Safe routes to transit and transit accessibility:** Assess pedestrian access/complete streets principles and identify first/last miles gaps in service along routes. Utilize GIS to develop ridershed maps of Foothill Transit service area using a 0.5 mile walking path to bus stops. This buffer area shall be overlaid with population and employment density and areas with highest density highlighted, so as to best visually understand the number of potential riders within the ridershed. A list of service headways for the highest and lowest density areas shall be combined with the map. The map and concurrent list will allow us to see whether Foothill Transit is delivering consistent service to the highest density areas or whether we are over-serving low density areas with existing barriers to bus stops (due to street or sidewalk network).
- F. **Analyze school district transportation services:** This is an optional item and should be priced separately from the rest of Task 4. Assess the level of service provided by school districts' departments of transportation including the historical number of K-12 students riding their district's respective school buses, compared with historical number of student riders on Foothill Transit in those areas. School district information such as enrollment numbers, percentage and number of racial breakdown and socioeconomic status shall be included. This section should include a graphic which displays low-income schools and districts with low school bus ridership, the proximity of these schools to existing Foothill Transit lines, and the potential for Foothill Transit to service these locales or duplication in current services.

Deliverables in Final Report

- ✓ KPI analysis and recommendations
- ✓ Organizational analysis and recommendations
- ✓ Transfers, TransCenters, Park & Ride lots - analyses, statistical indicators, and best practice guides
- ✓ Schedule coordination with other service providers
- ✓ Schedule adherence analysis and recommendations
- ✓ Transit accessibility analysis and GIS map
- ✓ School affiliated transit services analysis (optional)

TASK 5: Needs Assessment, Preferred Service Plan and Financial Analysis

- A. Project future ridership:** Produce projection of ridership in future years if service hours and routing remain same given regional population, aging, economic and highway traffic forecasts. Determine travel patterns based on SCAG, Metro, and County of LA models and assess whether Foothill service currently complements weekly travel patterns and where Foothill Transit can expand services to alleviate congestion and shift mode share. It is the Consultant's responsibility to take into consideration major transit capital projects breaking ground or nearing completion during the span of this contract (e.g., Gold Line expansion, High Occupancy Toll lanes).
- B. Growing ridership – coverage vs. productivity:** The Consultant will identify possible network design templates for the Foothill Transit service area given current demand levels, trip purposes, population densities, and projected forecasts. This section will look at alternative network design templates for increasing ridership via geographic means or productivity gains, tailored towards the specific customer markets in the San Gabriel Valley. The Consultant shall consider at a minimum the following models: trunk/feeder, hub-spoke, and grid. Each of the three models shall also include modified options which split the focus between coverage and productivity. The modified ratios to be applied for each of the three templates are: 70% Productivity/30% Coverage; 60% Productivity/40% Coverage; 50% Productivity/50% Coverage. For the hub-spoke model, the following locations shall be designated as "hubs": Montclair TransCenter or Pomona TransCenter; Puente Hills Mall or Industry Metrolink Station; West Covina Mall; El Monte Station; and the intersection of Azusa Avenue and Foothill Boulevard or another location in the northern third of the Foothill Transit Service area the Consultant deems appropriate.
- C. Service improvements:** Suggestions for overall system improvements based on the line-by-line analysis and service area evaluation. Solutions should include improved service via reduced travel times or minimized transfers among the alternatives. All proposals for new routes or modifications to existing ones shall be narratively described and supplemented by a map developed on an ArcGIS platform, showing the local street network and proposed modifications.
- D. Long term planning:** Two-year phased service plan that increases current, system-wide ridership levels 3% from the completion date of COA; a five-year phased plan with a goal of increasing ridership 5% over the two-year target; and a 10-year phased plan with a goal of increasing ridership 10% over the five-year target. Each plan shall include a fiscally constrained option and an unconstrained option. The fiscally constrained option shall be defined as not more than 15% of the sum of all lines' FY 2012-2013 budgeted contractor cost. Consultant shall refer to the Southern California Association of Governments'

2012-2035 Regional Transportation Plan and Sustainable Communities Strategy; Assembly Bill 1358: Complete Streets Act; and the Los Angeles County 2035 General Plan Mobility Element so that planned Foothill Transit services are synchronized with regional goals and play an instrumental role in the county transit network while reducing automobile trips, vehicle miles traveled and greenhouse gas emissions.

- E. Identify funding sources:** Identify grant opportunities and funding resources from government and other resources that would help realize unconstrained options of the 10 year plan.

Deliverables in Final Report

- ✓ Travel patterns and ridership projections
- ✓ Line-by-line service improvement recommendations
- ✓ System map for three different transit network models, each to include fiscally constrained and unconstrained versions of the phased service plans under different coverage/productivity schemes.
- ✓ Grant opportunities and deadlines

The final report shall include an executive summary and the main body of the report shall be organized in a logical manner which includes all of the aforementioned tasks and deliverables, and also takes into consideration other findings, assessments, evaluations, conclusions, and strategies uncovered over the course of the COA. The Consultant shall bind, print, and distribute six hard copies of the final report to Foothill Transit, as well as provide a PDF copy.

Timeline

The following is a general timeline. Consultant can begin work on a task before the scheduled timeframe but work shall not extend beyond the length of the allotted time:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Task 1. Work Plan and Schedule															
Task 2. Service Area Profile															
Task 3a,b,c. Current Foothill Ridership - Surveys, focus groups, descriptive statistics															
Task 3d,e,f. Current Foothill Ridership - Comprehensive analysis of survey data															
Tasks 4 and 5. Monthly progress reports. Deliverables expected at end of contract.															

APPENDIX A TO SCOPE OF WORK

Surveys will be drafted with input from Foothill Transit staff and the answers collected will define the different market segments within the service area. Questions to include are, at the minimum: Customer trip origin and destination for weekend and weekday (street and cross-street information); Trip purpose (e.g., home, work, school); Why people take public transit (e.g., cost savings, environment, convenience); How people consume information (in rank order to include categories such as desktop internet, mobile web, calling store, traditional print like newspaper, personal referrals etc.); Customer satisfaction regarding available information (e.g., website, bus book, transit tubes, maps); Access to/from transit (e.g., walking, arrival by car, wheelchair, bicycle); Transfer information and Linked trips that passenger makes; Ethnic/racial background; Gender identity; Age range; Employment/student status; Household income range; Household size; Language proficiency (primary language to access information); Automobile ownership; Internet use/smart phone ownership; Frequency of riding Foothill Transit; barriers to more frequent use (citing on-time performance, headways, span of service times, etc.); and fare product usage and where purchased. Consultant will be expected to track traffic and weather anomalies or other circumstances that may affect ridership or operations.